

# The Evolving Roles of Shipping Lines in International Logistics

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*Shipping lines are under pressure to expand the geographical reach of their services and to invest in value added services. The former, addressed by a number of strategies including slot charters, alliances and mergers and acquisitions, has been quite widely treated in the literature. The ways in which the lines are enhancing the range of their services has been subject to less study and is the focus of this paper. Viewed within the context of the economics of vertical integration, the paper reviews the organisation strategies of lines in relation to terminal management, intermodal services and logistics services. There is only close integration with shipping in the management of dedicated terminals and intermodal services. With one exception, P&O Nedlloyd's Value Added Services, the management of logistics services remains ostensibly quite distinct from shipping. In terms of pricing practices, this is reality but it leaves uncertain the level and ways of sharing information and resources related to logistics. The interest of lines in developing new relationships with shippers will place further pressure on collective pricing practices in liner shipping. International Journal of Maritime Economics (2002) 4, 210-230.  
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## INTRODUCTION

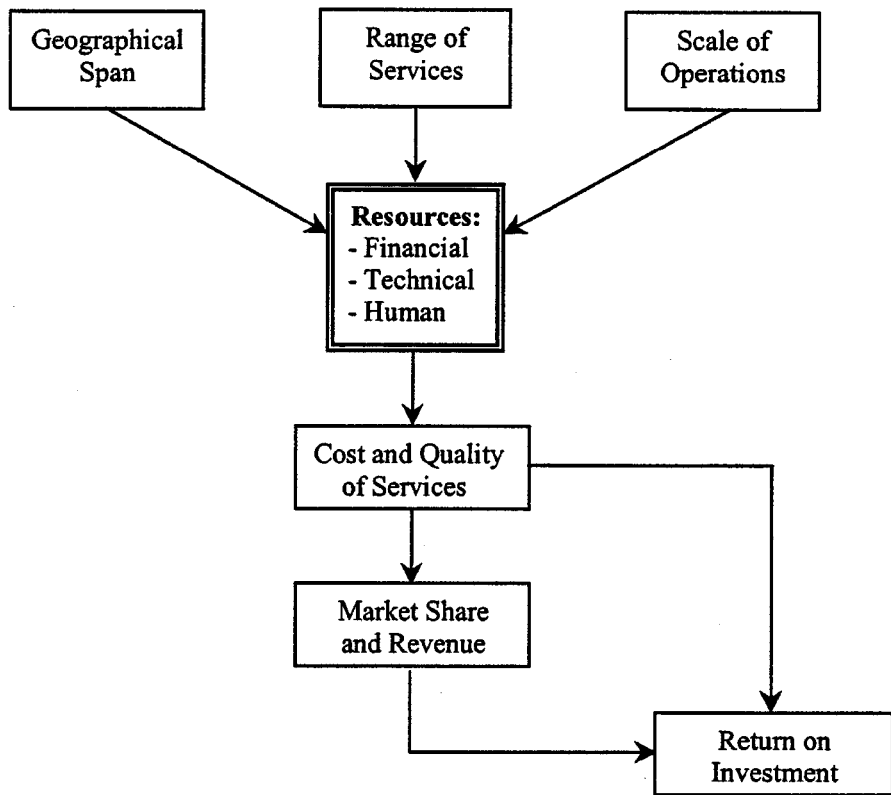
Substantial changes are taking place in the organisation structure of the transportation and logistics service industries. These changes reflect many



developments. They include technological developments in transportation and logistics, especially the advances in information technology (IT), the growth of trade and of global business strategies, and the evolution of supply chain management (SCM). SCM is characterised by a greater integration of functions along supply chains, by higher service levels for processes individually and collectively and a greater use of outsourcing. The developments are associated with diverse strategies among transport and logistics service suppliers as they position themselves to serve shippers in the changing environment. How they align themselves is dependent on their view of the current and evolving service attributes and organisational structures valued by shippers. In this paper, the evolving roles of shipping lines in international logistics are examined. The expansion of lines into vertically related businesses is examined and the organisational and management relationships among the units and with customers are explored.

The challenges for international liner shipping companies adjusting to the changing environment are summarised in Figure 1. It is a general framework appropriate for transport companies. The responses of lines to the challenges of developments are multifaceted and interactive but they are placed in three categories, each linked with a specific strategic direction. First, to meet the increasingly global needs of shippers for access to suppliers and markets while using a reduced number of carriers, shipping lines are under pressure to increase the geographical span of their services. Second, as shippers seek to integrate and improve the performance of their supply chains, carriers face issues about the range of logistics services to provide and the level of organisational integration to establish among their various services. Carriers may expand the range of services offered to meet shippers' logistics needs. They may do so under various organisational structures depending on their views of customers' preferences. Finally, lines need to find ways to hold or reduce their cost levels. This demands new efforts to achieve economies of scale and scope, key dimensions of a business in any network industry.

Actions taken to align corporate capabilities and attributes along any one of these strategic dimensions have implications for the attainment of corporate objectives overall. However, each of the dimensions can be associated with primary strategic actions. The geographical span of carriers' services has been widened by the extension of their own services, by mergers with or acquisitions of other companies and by sharing vessel space with other carriers either through alliances or slot charters. The vessel-sharing arrangements enable lines to extend their route coverage with a minimum of new investment in ships.<sup>1</sup> Increasing the range of services provided by lines requires different strategies dependent on the nature of services and on their vertical relationships. Investments must be made to improve the characteristics of shipping services, to improve information



**Figure 1:** A framework for the strategies of liner shipping companies

services and intermodal arrangements. They may extend to warehousing and full supply chain management services.<sup>2</sup> In widening the extent and range of their services, lines must consider the scale of their operations and its implication for costs. They may seek to reduce costs by acquisitions or other arrangements that create the potential for better use of central services and for increasing traffic density on routes. The latter may be achieved by changing route structures through hubs to concentrate traffic on trunk routes and by otherwise gaining market share on existing routes.

The selection of strategies by lines is dependent on their perceptions of customers' values by market segment and on the expected ability of lines to serve specific market segments profitably. Many characteristics of shippers and their logistics requirements account for identifiable market segments. They include the size and geographical extent of shippers, the mix of commodities handled, the



structure of their supply chains and the qualities of logistics services required, their policies on outsourcing, and the roles played by freight forwarders as transport brokers, as carriers and as logistics service suppliers. Lines are likely to differ in the way they interpret market developments and in their assessment of the best strategies to capitalise on the opportunities. Their perceptions on the willingness of shippers to outsource the selection of shipping lines and rate negotiation, especially to a subsidiary of a carrier, are important to their selection of services provided and organisation structure adopted.

The ability of lines to implement strategies profitably is related to their existing financial, technical and human resources. The lines start from different bases in terms of their size and resource mix. The latter includes: the financial resources available to them; the geographical extent of their services; their level of local market knowledge; the range and level of supporting services, especially in information technology; and the depth of human resources. The human and technical resources needed to provide market-competitive logistics services are often beyond the traditional expertise of shipping companies.

It is not surprising, then, that lines allocate their resources differently to market segments to achieve costs and qualities of service yielding profitable market shares and revenues. Of course, not all lines may be successful in getting the anticipated return on their investments.

The alternate strategies of lines involve organisational issues related to horizontal and vertical integration in liner shipping. This paper focuses on the latter as this has been subject to less analysis than the changing horizontal integration in the industry. Casson (1986) examined the role of vertical integration in all aspects of the shipping industry. Much of his attention was with bulk shipping and his methodology was to list the range of activities in which shipping companies engaged without considering their detailed nature or the organisational structure in which they were provided. His research was undertaken before some of the current extensions of corporations into businesses vertically related to shipping were prominent. Recent research (Fossey, 2000; Shirokawa, 2000) has explored the development of logistics services by lines but only limited attention has been given to the strategic issues faced by lines in selecting their level of involvement in added services and the organisation structure to follow for such services (Heaver, 1996 and 2001; Evangelista *et al.*, 2001).

This paper is in three further parts. The next part of the paper examines the economics behind liner strategies with an emphasis on the economics of vertical integration. This sets the stage in section three for examining the responses of lines to the opportunities for enhanced profitability through increased involvement in vertically-related activities. The final part of the paper offers conclusions about corporate strategies and suggests implications of current developments for public policy.



## THE ECONOMICS BEHIND LINER STRATEGIES

There are two basic economic relationships that underlie the strategies of Figure 1. The first is the pattern of relationships common in network industries; the effects on costs and service values of the geographic span of services (the network size) and of the operational scale (density) of traffic. The second relationship, which is given dominant attention in this paper, is the potentially complementary relationship between shipping and logistics services. A positive relationship would be the result of economies of scope.

### Network size and the economies of scale and scope

Over the last 15 years, shipping has changed from an industry in which the worth of a service to customers was largely dependent on its attributes on a trade route basis to an industry in which the extent of the network is important to the value of services. It does not have the critical network value of the telephone business but, for large shippers, it is an increasingly important service attribute.

The addition of routes by a line whether by alliance, merger or the extension of its own services is primarily a method of meeting customers' preferences for extended network size. The value placed by shippers on large route networks has increased as their businesses have become more global. For example, in 1995, when American President Line (APL) introduced its first service from Asia to Europe through a slot charter agreement, it accounted for its move from a Pacific-only strategy as a response to the pressures from shippers for global coverage. However, the limited contracting by shippers on a global basis leaves doubt about the weight given in shippers' service valuations to global coverage. Further, the expansion of a service network in shipping can be costly, as in other network industries, if the density of services is reduced.<sup>3</sup> The scope of service in the sense of the geographical size of the network increases costs unless the value of the enlarged network attracts sufficient traffic. It is for this reason that the entry of a line into a new service is often achieved through a slot charter arrangement until a volume of traffic is built up which will support a fuller participation in the provision of capacity.

The main economies of scale are economies of density achieved through the use of large-sized vessels and through the use of large, efficient terminals and related systems. The improved utilisation of terminals or ships that may occur with increased traffic is only a short-run situation arising from the lumpiness of investments. The development of larger and more important centralised services such as information systems has increased the potential for economies of scale associated with the overall business volume of a company but has not changed the dominant importance of the economies of density. What has changed is the increased value placed by shippers on the extent of network services and their



interest in more sophisticated services consistent with the higher logistics performance required in modern supply chains. The developments raise the possibility of new roles for shipping companies.

### **The economics of vertical control in liner shipping and logistics**

New economies of scope may be available for shipping companies as a result of the changing logistics needs of shippers. The possibility leads lines to consider the values of shippers and how the lines might structure their businesses to meet shippers' needs profitably. The result is that lines examine the potential benefits and costs of expanding their presence vertically in international shipping and logistics. They must also consider the organisational structure that would best fit their and shippers' interests. The actual behaviour of lines is considered in the third part of the paper.

Advantages accruing to vertically integrated firms may be placed in three categories. First, there may be benefits in demand complementarity among businesses, that is, the customers of one business may carry through as customers of the related business. Second, opportunities may exist for cost savings through the use of shared resources and expertise and through the avoidance or reduction of transaction costs among the businesses. Third, benefits may arise from enhanced visibility and market power and from diversifying the business base. The general potential for benefits exists whether the integration is achieved through ownership, some form of alliance or through contracting.

#### *Demand complementarity*

Demand complementarity exists when the customer of one business is likely to become the customer of a related business. This was the reason that railways entered the hotel business in the nineteenth century and that airlines did so after World War II. If the carriers transported the people, there was a high expectation that they would stay at the carriers' hotels. A decrease in the price of travel would increase demand for travel (a move down the demand curve) and would increase the demand for hotel accommodation (an upward shift in the demand curve). By participating in both businesses, the carriers captured a part, at least, of what would otherwise be an externality.

However, the existence of some demand complementarity does not necessarily warrant vertical integration. First, it may not be strong enough or persistent. In the airline business, the increased competitiveness in the hotel business has greatly diminished the probability of an airline passenger staying at the airline's hotel. Second, the two businesses may require different managerial abilities. There may be diseconomies in vertical ownership.

In shipping and international logistics, there is potential for demand complementarity but it is not clear how strong it might be. On the positive side,



the trend for shippers to prefer working with fewer suppliers increases the desirability for them of dealing with the same firm for sequential processes. Also, there is a possibility for complementarity to work in either direction. The lead contact with customers may be through the logistics service so that the demand for transport could benefit from the logistics service. Conditions contrary to strong demand complementarity are considered later.

*Opportunities for cost reduction and shared expertise*

A benefit of common ownership or control, prominent in the economic literature, is the reduction of transaction costs that would otherwise exist between separate businesses. Internalisation of the transaction process can remove the barriers to information flow and can result in optimal pricing to customers. However, presumption of this outcome assumes that internalisation removes all of the inefficiencies, which is not likely the case. The level of transparency is dependent on the actual organisation structure and practices followed. The reasons for treating owned subsidiaries as separate business units are considered later.

Integrated control of supply chain services may enable costs to be reduced as a result of synergies such as shared advertising. More generally, participation in various phases of a business may increase firms' knowledge and visibility in each of the business areas.

An important area of synergy is the use of information technology (IT). The rapid and accurate availability of information among supply chain partners has enabled more efficient transactions. It enables new approaches to supply chain management, reducing order cycle times, cutting inventories and making the systems more flexible. Therefore, the quality of the IT system of a supply chain is critical to its performance. Common ownership or control, such as shipping lines owning or controlling logistics services, facilitates the deployment of a wide, common system. The benefits of integrated control of IT would seem to have no offsetting costs. However, the advantages of the integrated enterprises may be diminished in the future by the development of community-based IT services such as the new portals being introduced collaboratively. For example, five lines are initial members of INTTRA, P&O Nedlloyd, Maersk Sealand, Mediterranean Shipping, Hamburg-Sud and CMA CGM (Damas, 2001) and nine lines are members of the Global Transportation Network (GTN), APL, CP Ships, Hanjin, Hyundai, K Line, Mitsui OSK, Senator Yang Ming and Zim (APL Press release, Dec. 4, 2000). Numerous other firms and organisations are also developing e-commerce portals for international trade and shipping.

There is also a possibility of common market and business knowledge among different services of a supply chain. For example, a shipping line working with shippers in a region may become familiar with their various service requirements



and may gain familiarity with the suppliers of those services in the region. The shipping line may be able to turn this local knowledge into the basis for a supply chain system. This was important to the early development of the integrated logistics services of the American lines APL and Sea-Land serving American importers buying in South-East Asia. The shipping lines had advantages over the traditional freight forwarders arising from their presence in South-East Asia. They had well-established relationships with the importers, including familiarity with the time and consolidation requirements for their shipments. They were, also, able to use existing IT systems to develop the shipment tracking capabilities desired by shippers.

#### *Other benefits*

There may be other benefits from vertical integration. First, the presence of a firm in various phases of a business may increase its market power through better knowledge of the costs of the various operations, the availability of more service options as a result of its vertical presence or, sometimes, as a result of the larger size of the more integrated firm. Second, extending a business vertically may bring some benefits associated with diversification such as exposure to different types of costs or price fluctuations. They may also offer different growth and profit potential, characteristics particularly relevant to international supply chains because of the recent growth of the market for logistics and supply chain services.

Overall, vertical control between shipping and logistics brings several potential benefits that have been enhanced by the vital role of IT systems and the greater importance of supply chain management.

#### *The disadvantages of vertical control in liner shipping and logistics*

Demand complementarity is weakened by three conditions. First, traditional horizontal agreements among lines in shipping conferences and similar agreements inhibit sophisticated negotiations between individual lines and shippers. The traditional role of shipping conferences in pricing liner services may contribute to the dominant preference of logistics managers to negotiate directly with lines on rates and their allocations of traffic among lines.<sup>4</sup> Second, shipping and, especially, logistics services are provided in highly competitive markets. When the choices of services are numerous and the substitutability among services is high, the chance of demand complementarity is low. Third, purchasers of logistics and transportation services are sophisticated buyers. They will be reluctant to use a logistics service if they feel it is designed to serve as a 'feed' to another business. This concern of shippers may be met by lines in various ways, including giving business units independence in their choice of service partners.



There may also be managerial disadvantages arising from attempts to manage various businesses in an integrated way. Shippers may expect to deal with different organisations for different services. Different human resource skills are required in the design and management of trucking, shipping, warehousing and supply chain management services because of the different characteristics of the businesses and the different practices expected by shippers. Different cultures among the businesses aggravate the challenges of integrating their management. The need to give managers of business units clear responsibility for the profitability of their units adds to the case for organisational separation. Although various internal arrangements are possible to make units profit centres, a clearer approach may be the establishment of separate businesses with freedom to accept or decline business and to choose business partners outside the interests of a parent company.

Finally, firms owning shipping and logistics/freight forwarding services may find some disadvantages in dealing with other market participants. For example, independent freight forwarders may have a preference for dealing with shipping lines that do not have services competitive with them. It may also be that shipping lines may be less accommodating to forwarders and logistics services that are linked with other lines. The closer the relationships between the lines and the logistics service units, the greater the negative effects may be.

The balance between advantages and disadvantages of vertical integration varies among regions and industries and with the condition and characteristics of particular firms. Large shippers with global service requirements appear more interested in entering into integrated supply chain service arrangements than other shippers (Beddow, 2001). The result of varied interests among shippers is that varied levels and forms of integration should be expected to exist among lines.

The trade press reveals the uncertainties about the long-term success of shipping lines in logistics service. Few lines have well-established logistics services. Many lines are new to the business (Gillis, 1998) so that shippers are sceptical about their ability to manage sophisticated requirements (Pryke, 2000). However, conditions are changing rapidly. For example, Neptune Orient Line (NOL) is very aggressive in its growth plans in logistics services, hoping that logistics will have revenues equal its shipping operations within five years (Fossey, 2000). Mitsui O.S.K. Lines (MOL) which has restructured and is expanding its logistics services has noted as recently as its annual report in 1999 that: *'we are still puzzled about whether or not shipping companies themselves should become comprehensive logistics service providers'* (Shirokawa, 2000). In his paper, Mr. Shirokawa wonders whether logistics services of shipping lines can *'compete with third party logistics service providers and forwarders.'* A review of the practices of lines reveals that they are following different strategies as they align their resources with the values of shippers.

## STRATEGIES OF LINES

Insights on the strategies of lines are available in the lines' public statements, are evident in their actions and have been suggested in private discussions with managers of lines and others in the shipping and logistics businesses. However, conclusions about lines' strategies are tentative for various reasons. The practices of lines and the reasons for those practices may be confidential so that inferring strategies is speculative. Further, customers' requirements are complex and diverse so that the actions of companies to serve them are complex. They are likely to have strategies targeted at market segments. As a result, generalisations about overall corporate strategies are dangerous but it is difficult to qualify them in detail to the reality of geographic and industry sub-markets.

Consideration of the strategies is covered in relation to three types of service. The services have major differences in the values they offer to shippers and, not surprisingly, serve to differentiate the strategies of lines. The services are: the relationship of lines with port terminals; the relationship with intermodal transport; and the relationship with logistics services.

### **The relationship of shipping lines with terminals**

In many parts of the world, shipping lines are becoming more involved with terminal management through control of terminals dedicated to them or through the management of terminals by their subsidiaries. Both of these developments are related to evolving public policies for ports outside of the US.

In the US, shipping lines such as Sea-Land have operated dedicated terminals since the 1970s. The dedicated terminals provided lines having a sufficient volume of traffic with better opportunities to integrate the schedules of their ships with terminal operations and to integrate closely ship, terminal and inland transportation arrangements. In most other countries, concerns of governments and public port authorities about the effects on competition of allowing dedicated terminals and the limited opportunities for lines to ensure effective intermodal services inhibited dedicated terminals. In the 1990s, greater interest in intermodal developments, the shortage of capital available to port authorities and the general increase in privatisation have resulted in an increase in the number of dedicated terminals and in the number of countries accepting them. Recent examples are Evergreen in Taranto, Italy, Maersk Sealand in Rotterdam and the Port of Tanjung Pelepas, Malaysia, and Hanjin in South Korea. Dedicated terminals are now commonplace. Units of the shipping lines manage these terminals, for example, Maersk Ports in the case of Maersk Sealand.<sup>5</sup>

The entry of separate corporations into the terminal management business is a different development. The worldwide need for more private capital and new opportunities in port business have resulted in the rapid growth of specialised



terminal management companies. Companies such as the Port of Singapore Authority, Hutchison Port Holdings and P&O Ports are using their specialised knowledge, including terminal information systems, to develop a global business. Two of the companies in the area are subsidiaries of well-known shipping firms; they are P&O Ports owned by P&O Steam Navigation Co., which has a 50% interest in P&O Nedlloyd, and Orient Overseas International Ltd. (OOIL), which also owns Orient Overseas Container Line (OOCL). OOIL manages four ports through a Terminal Investment unit (the terminals are in Vancouver, New Jersey, New York and Venice) and has two container terminals operated as a part of and for OOCL. These are in Kaohsiung and Long Beach (OOIL, 1999). In the case of P&O Ports and the Terminal Investment ports of OOIL, the expansion appears to have been an opportunistic response to a new business opportunity in an area where existing knowledge could be leveraged.

The port services provided by the two types of terminal operation are intermediate goods. The terminals do not sell major services directly to shippers.<sup>6</sup> The terminals view their main customers as the shipping lines as the contracts with them are the single largest determinant of their business volume. However, in the long-run, the success of terminals is dependent on how efficiently they serve the on-dock operations and the inland as well as the ship interfaces. Therefore, participation in the terminal business is either justified by the opportunities it provides to enhance the production of the basic transport service of the line, whether it is port-to-port or door-to-door service, or it is justified as an attractive business in the service of other transport companies. In the former case, a high level of vertical integration with shipping is required. It does not give rise to conflicts with shippers' interests. In the latter case, close vertical integration with the corporate shipping group would give rise to conflicts of interest with the lines to be served. It is not surprising that the specialised terminal management units are in quite separate organisation units from shipping lines.

### **The relationship of shipping to intermodal services**

The need for improved transport service quality as shippers have shifted to reduced inventories in more responsive supply chains is well known. The qualities of high service frequency, reliability of delivery and of capacity available are expected of the transport system, not just the shipping service. An important result is the need for better intermodal services.

Traditionally, the business of shipping lines was the movement of cargo on a port-to-port basis. This may still be true of smaller lines competing on a low-cost strategy. It is also necessary for most or all lines in regions in which intermodal movements are impractical or too risky. This still covers many parts of the world. However, in Europe, North America and, increasingly, in Asia, all of the major lines now offer door-to-door service. The percentage of intermodal arrangements



made by the shipping line is highest in North America where intermodal train service is well developed. Shippers or forwarders play a greater role in making the inland arrangements elsewhere.

In Canada, the freedom of CP and CAST to develop intermodal services with fully or partially owned carriers was one of the early advantages that the routing through Montreal had over competing US routes. These lines and others now under CP Ships, follow the intermodal strategy in Europe. CP Logistics, a unit in CP Ships, is responsible for making the intermodal arrangements through purchased transport services and a limited, but modestly expanding, amount of owned trucking. The role and organisational position of CP Logistics within CP Ships is comparable to Maersk Intermodal in Maersk Sealand.

In the US after 1980, greater commercial freedom and the interest of lines such as Sea-Land and APL in greater responsibility to shippers for service quality led to the rapid development of intermodal services in that country (Hill, 1998). The arrangement of intermodal international movements as a part of through pricing by the shipping lines was and has remained the responsibility of the shipping lines. However, APL became involved through APL Logistics (APLL) with North American intermodal services, managed within the Intermodal Marketing Services unit (IMS). IMS was involved in the development of stack-train services but this was sold to Pacer Stacktrain in 1999.

The integration of shipping with inland services has largely been achieved through shipping lines managing the purchase of inland transport. It has been done through a combination of long-term contracts and short-term purchases. The shipping lines have been in a better position than freight forwarders to commit for the volume of traffic necessary to make dedicated rail service viable under long-term contracts. The same is now evident in barge systems in Europe. Shipping lines have been leaders in the development of rail-dominated intermodal services in North America, Europe and China. The services have resulted in great strides in through transportation quality in North America but much remains to be done in Europe and certainly in China and other countries. To a limited extent, the shipping lines' services have been supported by owned trucking but the common ownership of rail and shipping, confined to Canada until 1984 and of limited impact since then in the US, has been insignificant because of the role of contracting. The extent of shipping-owned trucking is limited. It gives the lines a better knowledge of truck costs, greater flexibility of service level and some security of capacity at peak times. These advantages may come at the cost of somewhat higher costs. The ownership in trucking does not have any effect on the level of competition in the trucking sector because of its small size and the fragmented nature of the trucking business.

What are the consequences of the intermodal arrangements for vertical integration? Where it is physically practical, shipping lines need to be able to offer



door-to-door services. Shipping has extended beyond the oceans to a door-to-door business. However, they have not done this through common ownership across modes but, dominantly, through long-term contracts and short-term arrangements with independent inland carriers. Shippers have remained free to make their own inland arrangements, a practice more popular in Europe than North America. The main market inroad by lines in Europe as a result of better intermodal rail service has been more competition of the lines with freight forwarders in arranging inland transportation.

### **The relationship with logistics services**

Unlike intermodal services, which are managed within the shipping business, the conduct of logistics services is largely done in independent business units. Also unlike intermodal services, not all of the top 20 container lines in the world have such units. For example, Evergreen and CP Ships are currently focusing their efforts on excellence in meeting shippers' requirements through their shipping and door-to-door service capabilities.<sup>7</sup> The initial entry of lines into consolidation services was primarily by APL and Sea-Land enhancing their container services to meet the requirements of mainly US manufacturers and retailers who sourced in regions such as Asia. Now, however, the lines see value-added services in logistics as offering faster growth and better profitability than shipping. Statements of Neptune Orient Lines (NOL), P&O Steam Navigation Co. (P&O) and A. P. Møller are cited as evidence. Their interests in logistics are the largest of the maritime enterprises but are still of modest size compared with the major global freight forwarding companies.

Following its acquisition of APL, NOL established APL Logistics (APLL) to advance its strategy of rapid growth in the logistics area. In 1999, APLL was the fastest-growing business unit in the NOL Group with a growth in revenues of 26%. The President of NOL has stated that he wants *'the logistics business to challenge the Liner business as a major breadwinner of the Group'* (NOL Press Release, June 19, 2000). Its aggressive growth strategy is evident in its acquisition of the US-based GATX Logistics, the second largest warehouse-based contract logistics company in the US. The acquisition will increase APLL's revenue by 70% (APL Press Release, January 8, 2001). APLL views GATX as complementary, enabling APLL to serve customers more effectively through the primary (importing) and secondary (national) distribution phases of the supply chain. APLL includes ACS, IMS, GATX and other logistics units such as OCWS Logistics of Singapore. The company has offices in 55 countries and offers all elements of supply chain services as a carrier-neutral service provider.

With the acquisition of Sea-Land, A. P. Møller also re-branded its logistics services while leaving them independent of the shipping line. The previous Mercantile of Maersk and Buyers of Sea-Land have been re-branded as Maersk



Logistics (ML). ML's mission statement is that it '*is an independent organisation operating worldwide through locally incorporated companies and is engaged in satisfying customers' expectations in respect of competitive, international export and import management services*' (www.Maersk-logistics.com). It is largely a non-asset-owning company managing its quality through the careful selection of subcontractors. It has offices in more than 70 countries. ML acts as a full-service freight forwarder and logistics provider fully independent of the shipping line. It is in markets that are dominated by traditional freight forwarding requirements as well as those in which large clients such as large retail chains have special needs for more integrated services.

The A. P. Møller Group is less open than NOL about the role expected of Maersk Logistics (ML) within the Group. However, Soren Brandt, the head of ML, has noted: '*the logistics activity could grow to outperform those of the liner, but it will take a while*' (Le Lloyd, 2001). He also characterised the shipping and logistics businesses '*as distinct businesses.*' Growth of ML will be geographic and by introducing new services.

The logistics strategy of P&O, the senior company that holds the 50% interest in P&O Nedlloyd, is more complex. Most of the logistics services are in different businesses from P&O Nedlloyd but one is integral to the shipping business. When P&O Nedlloyd was created after the merger of P&O and Nedlloyd, it brought together the previously separately identified Global Logistics and a variety of logistics services that had evolved as ancillary to shipping activities. The new group is named Value Added Services. It is intended to work with P&O Nedlloyd customers in providing advanced logistics or supply chain management services. Intermodal transport arrangements are not the responsibility of VAS; they are managed within shipping services. P&O Nedlloyd is attempting to bridge the gaps of different personnel skills and backgrounds among its own employees in shipping and VAS. It has one sales force but hopes to develop effective contact levels with clients to deal with shipping and logistics interests. It expects to identify effectively those clients for whom an integrated approach of a line with its logistics service is practical and attractive.<sup>8</sup>

P&O is not following this model only. It has three other logistics service groups that operate quite separately from the shipping services. Damco is a separate but wholly-owned subsidiary of P&O Nedlloyd engaged in freight forwarding with its own offices in nine countries in NW Europe and the Far East and represented through partnerships with local forwarding agents in a further 40 countries. This is a typical organisation structure for a modest-sized freight forwarder. P&O has two separate logistics service companies. They are P&O Trans European, a European-based logistics service company, and Cold Logistics, which specialises in serving the cold-product sector globally. The Chairman of P&O in his message to shareholders in the 1999 Annual Report notes that the company's



logistics services are *'high growth, high return businesses'* and that *'the ongoing P&O would focus on its high return logistics activities.'* In 1999, there was a return of 13% on net operating assets.

So, what do these examples suggest for the level of vertical integration in the operation of the logistics and shipping businesses? With the exception of VAS, the businesses are organised as quite separate corporate units. There are good reasons for this. There are substantial differences in the skills required in the design and management of trucking, shipping, warehousing and supply chain management functions. The points of interface of these services with clients – consignors or consignees – differ and the knowledge and skills of sales and service personnel need to reflect this. While the differences may be lessening as shippers and carriers develop more sophisticated approaches to logistics management, the differences are still significant. Finally, but perhaps most important, many shippers currently prefer to have separate management responsible for shipping and logistics services. They value control of the processes of rate negotiation and the related allocation of traffic among lines. If these functions are delegated, shippers are very reluctant to see them go to a subsidiary of a shipping line. In spite of statements to the contrary and organisation structures that leave the logistics units in separate corporations, shippers remain concerned that logistics services associated with lines are expected to 'feed' cargo to the lines.

Lines attempt to meet the concerns of shippers in various ways, including giving the logistics businesses independence in their choice of service partners. However, the message of lines about the relationship between the shipping and logistics businesses is not clear-cut. In their reorganisations, both A. P. Møller and NOL re-branded their logistics operations with the names similar to the liner shipping company. The companies have globally recognised linked names although the management of the logistics and shipping businesses are still claimed to be quite separate. The sales activities of the businesses are separate. However, NOL has been trying for some time to increase the awareness of its sales forces to the service range of its companies. The level and ways of sharing resources and information between the business units remains uncertain. The approach of P&O is to position VAS to serve those clients (sectors of the market) for which the integrated shipping and logistics services are welcomed, while having separate companies to participate more widely in the logistics and freight forwarding markets.

The lines with established logistics services are expanding them rapidly and many other lines are developing more logistics services, for example, COSCO,<sup>9</sup> Mitsui OSK Lines and OOCL. However, it seems likely that for some lines concentration on shipping and excellence in intermodal capabilities will be the most profitable strategy as full logistics service is a different business.

## CONCLUSIONS

The strategies of liner shipping companies have been changing as they seek to build on their resource bases and align themselves with the changing values of shippers. The result is different strategies among lines and different levels and ways to approach the vertical integration of services offered. Conclusions about the strategies of lines related to vertical integration are offered before considering the implications of the strategies of lines for the active public policy debate about shipping conferences.

### Conclusions on corporate strategies

The separate treatment of the extension of shipping lines into the businesses of container terminal management, intermodal transport and logistics is warranted. First, lines have entered into them to different extents. Second, the organisation practices followed differ among the services and the lines.

Where major lines have a sufficient traffic volume on a route, they increasingly seek to heighten the level of integration with terminal operations by having a dedicated terminal. The terminals are managed by subsidiaries of the shipping company to increase the efficiency of operations as an intermediate service to carriers and not as a service provided directly to shippers. Only two companies with major shipping interests (P&O and OOIL) have entered into the container terminal management with a primary interest in serving other lines. Their customers expect them to run the terminals quite independently from their own shipping companies. While expertise has no doubt been garnered from the corporate experience in dedicated terminals, the terminal companies are managed through quite separate corporations. Unlike the operation of dedicated terminals, there is no implication for operational integration beyond that in the capability of the management.

All major lines offer intermodal services where practical. They are managed by units of the shipping companies and are provided through contracts with inland carriers. The services are designed to provide shippers with a choice of door-to-door service or port-to-port service. Lines have been most successful in providing value for shippers in North America where conditions have been favourable to the development of long-term contracts for effective rail service. The essence of the intermodal services is to provide a service with a single management responsible to the shipper. However, integrated ownership of the marine and inland transport is not necessary.

Not all firms with liner shipping are involved in providing value added logistics services. While the trend among the major firms is for an increase in logistics offerings, some companies are concentrating on the provision of shipping and intermodal services. CP Ships and Evergreen are examples. They have aimed to build profitability through focused service development and expanded geographical coverage. In part, the strategy of companies focusing on shipping and intermodal



services is based on the view that the transport process is not and is not likely to become 'just a commodity.'<sup>10</sup> There is sufficient value differentiation among services in reliability and service responsiveness, particularly on a door-to-door basis, that excellence is rewarded. CP Ships, which has expanded rapidly through acquisitions, has made a point of retaining the identity of acquired firms because of its belief in local brand value. In the case of CP Ships, it may be argued that its rapid and recent expansion in liner shipping has precluded diversification into logistics, but the same can hardly be said of Evergreen. Also, many lines have achieved the expansion of shipping without links to corporate logistics services, for example, by COSCO; although COSCO has now set up a logistics company. It is appropriate to conclude that the success of a line in serving important groups of shippers is not dependent on its ability to offer logistics services.

However, an increasing number of companies with line shipping businesses are entering the international logistics business. The extent of synergies that they visualise and the organisational relationships that they expect to see developed are uncertain. While there are shippers that value the integration of shipping and logistics services under one corporate control, the majority of shippers prefer independence between the services. For the service providers, there are synergies in the integrated provision of shipping and logistics services, but there are also disadvantages, especially in the eyes of shippers. The predominance of disadvantages is reflected in the separate organisation structures adopted for shipping and logistics services.

Firms such as NOL and the Møller Group that have strong logistics businesses have organised them to be quite separate from their lines. Only P&O Nedlloyd has chosen to offer logistics services as a visibly integrated offering with shipping in its recent and currently small VAS unit. The future relationship between the logistics and shipping services of maritime firms in both businesses is speculative. It seems likely that the general freight forwarding and logistics business will remain in quite separate corporate units from shipping as is now the case for most lines. However, for major shippers that can benefit from integrated transport, logistics and IT capabilities, the business of the lines and logistics services are likely to come closer together. The model of P&O Nedlloyd with internal (VAS) and external relationships may exemplify the pattern. Corporations in shipping may have independent logistics and freight forwarding companies while developing in-house supply chain design and management capabilities. The division will never be as clear-cut as P&O and OOIL achieve in the management of port terminals for their ships and the management of port terminals as a business, but the pattern could be comparable.

The outcome of the relationship of shipping with logistics services will remain uncertain for some years. Some lines will likely continue to follow a door-to-door only service strategy, as Evergreen and CP Ships are now doing. There is

an opportunity for corporations with shipping lines to expand into the logistics service business but, as now, much of this will need to be in corporations separate from shipping. The main uncertainty is the organisation structure the corporations will follow to service customers attracted to the integration of shipping and logistics businesses. The model of an explicit supply chain management group in the shipping line to serve such customers appears to be the most likely outcome.

Another uncertainty is the long-term profitability of logistics services for maritime groups. The international logistics business has been increasing and has attracted entry not just by maritime firms but also by international freight forwarders and national logistics companies. It remains to be seen whether the returns expected by the entrants will be achieved in light of the heightened competition. The success of lines will be dependent on the extent to which they can differentiate themselves and meet the requirements of market segments.

Outcomes will be influenced by the attitudes of shippers and carriers and the regulatory environment in which they operate. The president of NOL, Flemming Jacobs, is quoted as having said recently that: *'Shippers and ocean carriers are 'confused' when they focus on narrow yearly negotiations on freight rates, instead of looking for opportunities to increase overall supply chain efficiencies'* (American Shipper, 2001). He went on: *'I am going to give a wake-up call to those who still get their kicks from yearly, or even more frequent, fights over freight rates with their ocean carriers – those who just cannot wait for the 1st of May to come around and who derive the greatest satisfaction from succeeding in squeezing another \$50 from the carriers, even though in the process they miss tons of opportunities in the total supply chain.'* The attitudes of concern to Mr Jacobs are influenced by the policy environments under which shipping has been and is provided.

### **Implications for public policies on shipping conferences**

Developments in public policies are relevant to the relationships among shipping lines and to the relationship of lines with shippers. Details about the structure and reasons for shipping conferences and the changes in their regulation are not relevant to this paper. However, a few details of the structure and practices of conferences are relevant.<sup>11</sup>

Conferences are voluntary agreements among member shipping lines that exist for the purposes of restraining competition among members and curtailing the competitive influence of non-conference services. Each conference has jurisdiction on a particular route or a related pattern of routes, generally only in one direction. Because the regulations to which they are subject vary from country to country, the conferences' practices vary. However, the general and dominant means by which they restrain competition is through collective pricing. The centralised processes of collective pricing have been breaking down in most trades and have almost totally broken down in some trades. Under the US *Ocean Shipping Reform Act* (OSRA),



effective in 1999, conferences are required to give members the right of independent action in confidential contracts with shippers. The result has been a weakening of conferences and the cancellation of conferences in a number of US trades. However, two things persist. The first is discussion agreements among lines that exist whether there is a conference or not and involve conference and non-conference lines. These agreements, for example the Trans-Pacific Stabilisation Agreement (TSA) set targets for general price changes. The second is the hangover from the traditional practices that sees major shippers focusing on rates in their discussions with lines. This practice is the matter to be explored further here.

The collective pricing actions of lines are horizontal across the shipping lines. This conflicts with the potential interest of shippers in strengthening logistics integration by dealing with a single transport and logistics provider. It conflicts too, with the shifting interests of lines to extend the range of their services that might be priced as an integrated package. However, the practice of pricing the transportation service separately is deeply entrenched with lines and shippers. The service agreements under the US *Shipping Act* of 1984 were a misnomer for they were volume agreements. In the confidential agreements under OSRA, it seems that a couple of aspects of service are in some contracts. They relate to delivery reliability and capacity availability, both attributes of the transportation services. The contracts remain within the traditional time horizons with most contracts being for a year and route specific.

The practices described by Mr. Jacobs may be explained in a number of ways. First, remnants of the horizontal approach of lines to pricing encourage managers to focus on rates. The approach of managers steeped in conference traditions does not change immediately because the pricing target is set by a 'talking agreement.' Second, most lines' pricing managers do not expect to get involved in discussions involving logistics services, even if provided by an affiliated company. The business units are separate. Only P&O Nedlloyd has set up an organisation structure designed to achieve the goal that Mr. Jacobs has in mind. Third, some shippers believe that shipping is becoming like a commodity. It is sufficiently homogeneous among a number of lines that long-term and close relationships are not necessary. Only price and narrow service attributes need to be negotiated.

It is not clear whether the elimination of all collective pricing practices among lines, as desired by shippers, would eventually eliminate the narrow focus on rates, but it would encourage more attention to vertical service and pricing issues. However, recent discussions and negotiations at the OECD seem likely to result in continued allowance of collective pricing practices as long as independent and confidential rates can be negotiated by lines (OECD, 2001). The requirement of confidential contracting will increase opportunities for new relationships in some trades. However, it will leave to the gradual process of commercial erosion the further shift of pricing in liner shipping to a focus on the requirements of individual shippers.



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## ENDNOTES

- <sup>1</sup> The strategies of lines in pursuing alliances and mergers have been covered by many writers. They include: Brooks *et al.*, 1993; Gardiner, 1997; Evangelista and Morvillo, 1999 and 2000; Brooks, 2000.
- <sup>2</sup> The widening range of services provided by shipping companies has been less widely covered in the literature. Its origins are in the growth of multi-modal transport; see, for example, Yamada, 1990. More recently, the frontier of development has extended to logistics services; see, for example: Evangelista *et al.*, 2001; Fossey, 2000; Heaver, 1994, 1996 and 2001; Heaver *et al.*, 2000; Shirokawa, 2000.
- <sup>3</sup> Studies of the economies of density and of scale are to be found for the airline and rail industries; see, for example: Caves *et al.*, 1984 and 1985. Comparable studies have not been carried out for liner shipping.
- <sup>4</sup> Report of a recent survey by *Containerisation International* (Beddow, 2001) indicates that most shippers still prefer to retain control over key decisions in international transport and are not in favour of integrated supply chain management by an external service supplier.
- <sup>5</sup> Since this paper was written, A.P. Møller has reorganised its port business as a separate business unit, APM Terminals.
- <sup>6</sup> Container terminals are designed as transfer and throughput facilities. They are moving away from container storage and the provision of on-dock cargo-handling services that might be requested by shippers. Although labour intensive, cargo handling has been a small part of terminal business.
- <sup>7</sup> American Shipper, Shippers Newswire, Newsflash, 21 June 2002, reports that Evergreen will invest in forwarding and logistics in Asia and South America.
- <sup>8</sup> In a news release of June 24, 2002, P&O Nedlloyd announced the transfer of its portfolio of Value Added Services into a new division called 'P&O Nedlloyd Logistics,' a separate corporation to provide and develop the services of VAS but with greater autonomy and customer focus. It is intended to provide a clearer distinction between shipping and logistics services.
- <sup>9</sup> A COSCO news release officially announced that COSCO Logistics Co., Ltd. (COSCO Logistics) would come into operation on January 8th, 2002.
- <sup>10</sup> This is not a view of all shippers, especially when they are engaged in rate negotiations with carriers. They then wish to emphasise that there is a sufficient number of carriers with like services that it is easy to substitute one carrier for another.
- <sup>11</sup> For a review of conference practices and issues see Heaver (1992) and Brooks (2000).

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